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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,521	04/15/2005	Kaoru Katayama	20421/0202621-US0	1880

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EXAMINER	
LUU, THANH X	
ART UNIT	PAPER NUMBER
2878	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,521	KATAYAMA ET AL.	
	Examiner	Art Unit	
	Thanh X. Luu	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2007 and 28 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 13, 2007 has been entered.

Claims 1-9 are currently pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicks et al. (U.S. Patent 5,969,810) in view of Garfunkel et al. (U.S. Patent 4,244,650).

Regarding claims 1, 8 and 9, Nicks et al. disclose (see Fig. 1) an inspecting apparatus for detecting a defect of a glass bottle (14) by imaging light from the glass bottle while the glass bottle is illuminated and rotated and processing the obtained image, comprising: a lighting device (18, 20, 22) disposed at a predetermined position with respect to the glass bottle; a plurality of CCD cameras (24, 28) disposed around

the glass bottle for imaging a specific part (a side) of the glass bottle; an angle detection device (40) for detecting a rotation angle of the glass bottle with respect to a reference position; and an image processor (41) for processing the images obtained by the CCD cameras; wherein the image processor stores rotation angle information detected by the angle detection device in such a manner that the rotation angle information corresponds to the image imaged by each of the CCD cameras (see images reproduced in Fig. 3 and col. 4, lines 35-40). That is, since "unwrapping" the bottle includes piecing together linear images by angles, the rotation angle information (angles) is stored and corresponds to the image imaged by each of the CCD cameras. Nicks et al. do not specifically disclose visually detecting a rotation angle. However, Garfunkel et al. teach (see col. 4, lines 3-6) using an optical (or visual) shaft encoder for detecting the position of a bottle. Furthermore, as understood, the position of a light source and a detector in an optical encoder represents a predetermined reference position. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide such visual detection in the apparatus of Nicks et al. in view of Garfunkel et al. to obtain more accurate and precise detection through non-contact detection as taught.

4. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicks et al. in view of Garfunkel et al. and further in view of Tokumi et al. (U.S. Patent 4,758,084).

Regarding claim 2, Nicks et al. disclose the claimed invention as set forth above. Nicks et al. do not specifically disclose including the rotation angle information on the image. Tokumi et al. teach (see Fig. 10) similarly unwrapping an image, but with the

rotation angle information on the image. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such information on the image in the apparatus of Nicks et al. in view of Garfunkel et al. and Tokumi et al. to more easily locate and size defects.

Regarding claims 3 and 4, Nicks et al. disclose the claimed invention as set forth above. Nicks et al. do not specifically disclose comparing images to detect a defect. Tokumi et al. teach (see col. 4, lines 63-68 and col. 5, lines 1-25) comparing an image signal to a reference image signal for defect detection. A reference image would inherently be without defects and be produced in advanced since defect detection is conducted in real-time during the inspection period. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to compare images as claimed in the invention of Nicks et al. in view of Tokumi et al. for efficient defect determination. Nicks et al. further do not specifically disclose the reference image having the corresponding rotation angle information. Tokumi et al. further teach (see col. 4, lines 63-68) aligning the image signals such that the center of the image signal corresponds the center of the reference image signal. Thus, Tokumi et al. recognize that in order to properly compare images, corresponding points must be made to coincide. Similarly, as applied to angle information, one of ordinary skill in the art would realize that corresponding angle information of the reference image is required. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such corresponding angle information on the image in the apparatus of Nicks et al. in view of Garfunkel et al. and Tokumi et al. to correctly implement

comparison.

5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicks et al. in view of Garfunkel et al. and further in view of Cormack et al. (U.S. Patent 4,872,757).

Regarding claims 5-7, Nicks et al. disclose the claimed invention as set forth above. Nicks et al. do not specifically disclose storing mold information, manufacturing number or inspection result corresponding to the images. Cormack et al. teach (see Fig. 13) an image in an inspection system having product information and other information included on the image. The type of information being included on the image is a matter of design choice. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide mold information, manufacturing number or inspection result corresponding to the image in the apparatus of Nicks et al. in view of Garfunkel et al. and Cormack et al. for easier association and monitoring of defect trends.

Response to Arguments

6. Applicant's arguments filed February 13, 2007 have been fully considered but they are not persuasive.

Applicant asserts that Garfunkel does not teach defect inspection. However, as noted by Applicant, defect inspection is only found in the preamble of claims 1 and 8. Furthermore, it is the reference of Nicks that teaches inspection and defect detection. The reference of Garfunkel is simply used to teach the visual detection of the rotation angle. Examiner reminds Applicant that the references should be taken together and in

combination, not singly.

Applicant also asserts that the encoder of Garfunkel operates different in principal from the present invention. However, this difference in operation principal is not reflected in the claims. Applicant simply claims "visually detecting" or "detecting." Since, nothing in the claims precludes the encoder of Garfunkel, such an assertion is not persuasive.

Thus, as set forth above, this rejection is proper.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thanh X Luu
Primary Examiner
Art Unit 2878

04/2007